THERMAL SPRAYS

MECHANICAL

INDUSTRIES

WELDING

SURFACING
TECHNOLOGIES LTD

Company Profile

IRS Surfacing Technologies Ltd was founded in 1989 by the late John Berry. His objective was to put together a market-leading technological facility specifically embracing the modern concept of cost efficiency. This would enable the company to deliver a high level of service to its customers and build long-lasting sustainable business relationships with engineering firms across the country.

To achieve this, John Berry brought together a specialist group of like-minded quality-conscious individuals, driven by the common will to succeed. This emphasis on high-value recruitment has remained core to the company values of IRS, with a focus on recruiting and retaining a highly professional and skilled workforce who are dedicated and committed to delivering exceptional results every time.

Even in 1989, John Berry was ahead of the curve. He heavily invested in the latest fringe technology as well as DTI R&D initiatives. This foresight has continued throughout the decades, with the team at IRS constantly keeping abreast with developments and innovations to continue to offer a premium service to their clients. Careful business strategy means that even through turbulent times, IRS has continued to invest in the latest machines and technologies, to ensure that the service they provide is always excellent.

John Berry understood that success lay in collaboration, and consequently IRS has always worked with other respected professionals and businesses, to bring the high standard of quality and service that they are renowned for.

Collaborating with world-respected materials

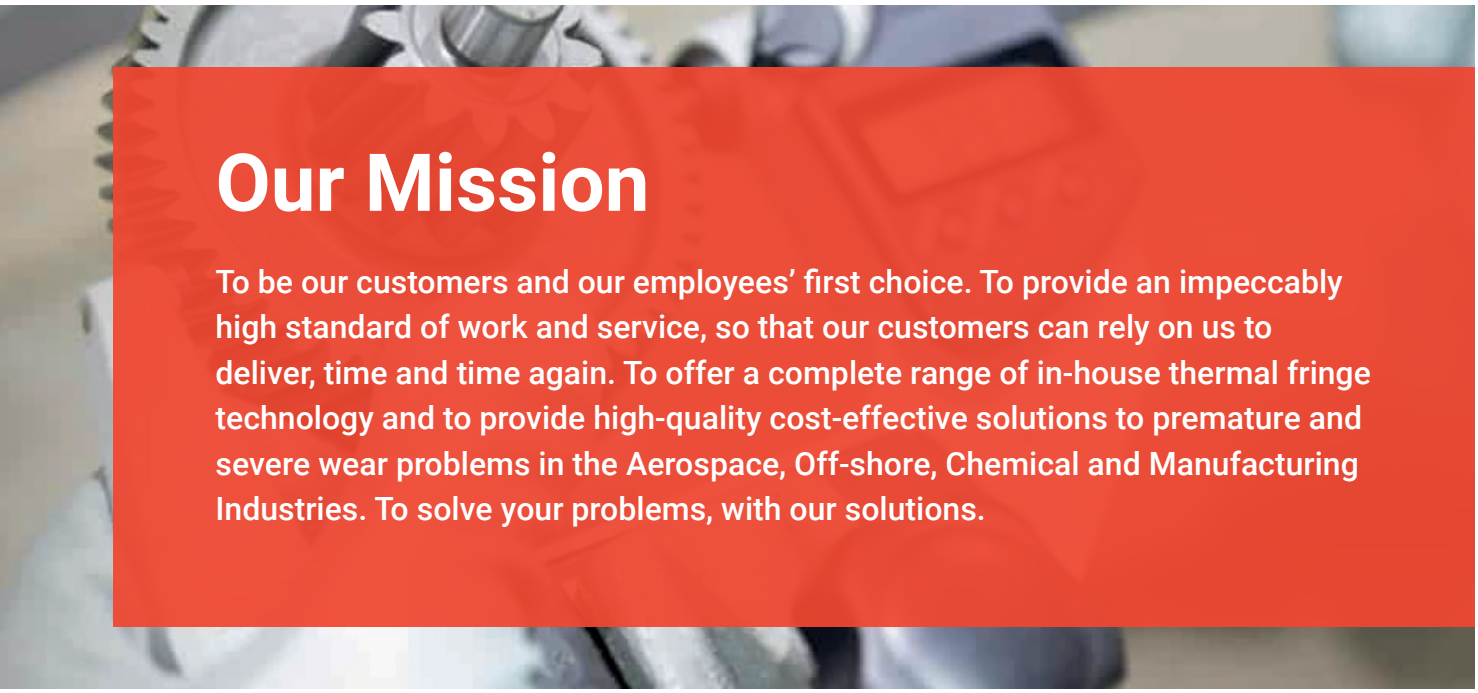
and research centres of excellence, combined with direct access to O.E.M consumable chemistries, has given IRS an unrivalled depth and breadth of knowledge and experience.

Consequently, IRS Surfacing Technologies Ltd offer a virtually unrivalled service in overhaul, reclamation, specialist overlay and reverse engineering fields.

Now managed by John's son Rob, IRS operates out of 11,000 sq. ft, where they employ a complete spectrum of high energy thermal spray and overlay systems ranging from liquid fuel H.V.O.F. through Plasma, P.T.A., Hypersonic Arc and Computerised Spiral Welding facilities. The latest investment in 8-axis robotics has ensured consistency and repeatability for our customers.

IRS understands the complexities of processing critical components, and the importance of ensuring timely delivery and a stable pipeline. Many businesses are reliant on IRS, and goods processed by IRS now stretch across the globe. Customers have peace of mind knowing that they can rely on the team at IRS to deliver on time and on budget, to a consistently high standard.

IRS really do have a 'can do - can help' attitude no matter the size or scale of your business. We enjoy forging new relationships with customers, as well as providing ongoing support to long-standing customers. We believe that we are here to help solve your problems. Our support extends to on-site procedural and chemistry assistance and technical support, to our clients, and this is always available without obligation.



Our Mission

To be our customers and our employees' first choice. To provide an impeccably high standard of work and service, so that our customers can rely on us to deliver, time and time again. To offer a complete range of in-house thermal fringe technology and to provide high-quality cost-effective solutions to premature and severe wear problems in the Aerospace, Off-shore, Chemical and Manufacturing Industries. To solve your problems, with our solutions.

Thermal Processing Systems and Processes

Thermal processing provides an affordable and resilient solution to wear and tear, damage or corrosion on crucial components. We offer a range of different types of thermal processing and will always advise on the best type of thermal processing for your individual component. Thermal processing is used across a number of industries such as pump, chemical, transport and manufacturing.

HVOF Metallurgical & Ceramic Chemistries

HVOF is commonly used for the restoration of damaged or worn parts. Its low porosity, high-quality repeatability, and excellent bond strengths make it an ideal choice for use on subsea infrastructure components. It is used on parts that need to be hard-wearing and long-lasting, as coating components with HVOF can help extend the life of the working parts. It is a good choice for valve gates and seats, mandrels, and ball valves. It is used on landing gear and in gas turbines. We use Tungsten + Chrome carbides – with full Ceramic ranges up to 1450 Hv. HVOF gives chemical, heat and wear-resistant coatings of less than 0.5% porosity. Different coatings are available, such as chemical-resistant G30, C22, C276, Ultimet alloys and Titanium.

High Energy Liquid Fuel - ABB 8 Axis Robotics & Integrated Turntable

For the highest quality, dense and high build deposits of soft alloy, anti-corrosive and wear-resistant materials. Tungsten Carbide ranges in excess of 1699Hv. It offers extremely low porosity deposits in excess of 3.0mm thickness. Commonly used materials include Inconel 625, Hastelloy C276, Ultimet and most corrosion-resistant alloys. Soft aluminium bearing alloys, full Tungsten, Chrome and Titanium Carbide ranges in standard or proprietary matrices, as well as pure Titanium are also available. We offer proprietary analysis to meet special requirements. This incorporates fully co-ordinated 8-axis robotics and software support.

Plasma ARC (N.T.A.)

A good choice for large surface areas, our plasma ARC (N.T.A) coatings are available in a wide range including Chrome Oxide, Pure Alumina, Alumina Titania Dioxide, Zirconia Yttria, Tungsten and Chrome Carbide wear resistance. This will create a full ceramic wear-resistant, chemical-resistant and thermal barrier finish.

Plasma Bore spray (N.T.A)

Using the same coatings as the plasma ARC (N.T.A.), plasma bore spray (N.T.A.) is used for coating the insides of diameters and bores.

Plasma Arc (P.T.A.)

Plasma PTA is commonly used for all types of valves in the automotive, marine, and petrochemical industries, such as engine valves, manipulator systems, beam and carriage systems, and valvestar systems. Our coatings are chosen to give hard, porosity-free coatings that are molecular bonded. Our range of coatings includes all alloys, Tungsten, Chrome, Titanium and Nickel Carbides, High Nickel Alloys and Bronzes, as well as Stellite, Hastelloy, Inconel, and Monel. Also oscillator controlled spiral-welded deposits with low dilution levels.

Plasma Bore spray (P.T.A)

Using the same coatings as the plasma ARC (P.T.A), plasma bore spray is used to coat bores, barrels, feed lines and dies.

Twin Reel Hypersonic Arc-Spray

Any location where the potential for corrosion is high will benefit from using hypersonic arc spraying. With the low porosity combined with the high quality of the finish, hypersonic arc coatings will provide an extremely hard wearing result. Ideal for areas of high traffic, and extreme wear and tear, such as gantries or walkways. Coatings include Chrome alloys, Aluminium Magnesium, bronze, Stainless and Carbon Alloys, Hastelloy and Tungsten Carbides. We can also offer the reclamation of component parts, such as bearings, journals and roller coatings. We have specific Offshore and chemical anti-corrosive coating, which can extend the life of the coating and the components. Chrome Alloy and pseudo metal coatings for Capstan Bull blocks and wire handling pulleys. We can also offer Hastelloy C22 and G30 Alloys.

Techni-Chorde

We offer a full range of hard-facing alloys plus mid-ceramic facilities. Rocdur ranges in chordes. Nickel Alloys plus many more specific analysis.

High Velocity Arc-Spray

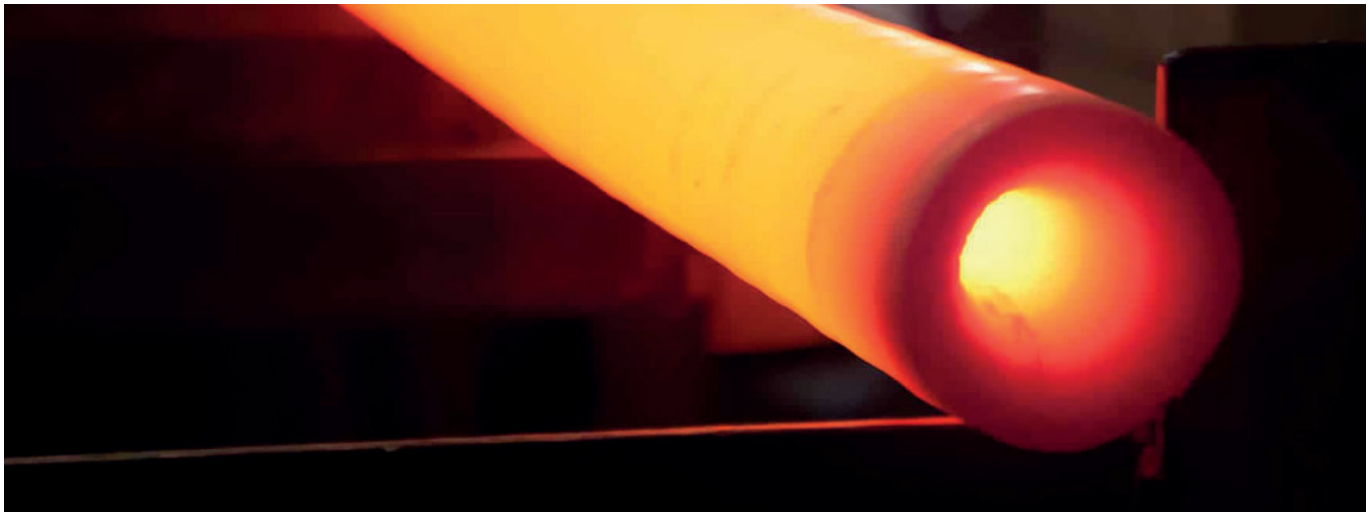
Our High-Velocity Arc-spray process deposits high-density higher bonded deposits in all consumables. It gives considerably better integrity and smaller particle structure than standard arc-spray deposits, making it an ideal choice for complex components where resilience is crucial.

ArcSpray Bore-spray

A similar process to the standard arc spray, though designed to work on bores and similar structures. We offer a full range of carbon steel, nickel and bronze alloys.

Flame-spray

An affordable thermal coating, flame spraying is a good choice for components or larger areas where other thermal coating options would be cost-inefficient and result in over-engineering. We have standard flame-spray facilities for fluxing alloys, with most mainstream systems in operation.



Fusion

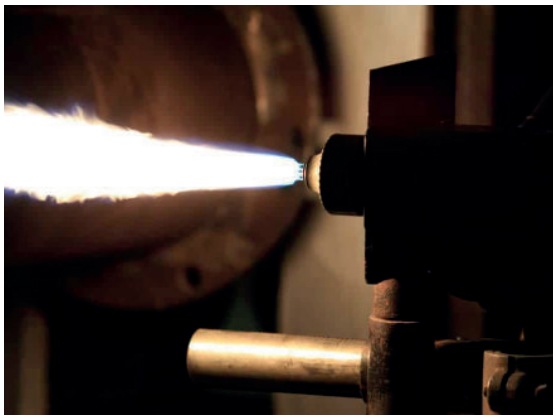
Fusion spraying is used to repair and maintain parts from a thermonuclear plant. It has been developed specifically for the nuclear industry to help the advancement of other sources of energy as we transition away from fossil fuels. The industry is evolving extremely quickly and we make sure we keep up with any developments in this field. We offer a full range of fusion processes incorporating all leading manufacturers' systems. We can rebuild press tooling and dies. Fusion spraying gives hard, dense, virtually porosity-free molecularly fused deposits where heat input to the substrate is not a prohibitive problem.

Rokide/Norton Ceramics.

We are the only UK-equipped and approved Rokide/Norton applications centre. The Rokide spray system is a patented system and is unique in that it projects only fully molten particles onto the substrate when compared to plasma or flame-spray processes. The results are a much-improved anti-cavitation resistance, particularly on point contact pressure applications such as wire drawing cones and associated wire drawing tooling.

Nylon and Plastics Spray

Our nylon and plastic spray service gives anti-corrosion, chemical resistant and low friction coatings to pulleys, chutes and components needing to resist acid attacks in low-temperature non-abrasive duties where a relatively cheap solution is required. It is also good for decorative enhancement in most colours. We offer Nylon 1 and EVA Plastic coatings.



New! 80 Rc Tungsten Carbide on Tool Steel

Our latest addition to the thermal processing range, 80 Rc Tungsten Carbide is molecularly bonded, which means that it won't chip or detach. An ideal choice for applying to injection moulding screws, rotary valve components and guillotine blades, as well as other vital components.

Mechanical Services and Support

Here at IRS, we offer a range of differing mechanical services to our customers. We will always work with you to advise on the best service for your needs. Every project that we undertake will have different challenges and issues, and we will approach each one on an individual basis so that you always have a bespoke solution for your problems.

Turning

Turning or turn-milling can be used successfully to overcome engineering challenges. Due to the automation of turn-milling machines, they can deliver precision with speed and uniformity. This allows them to produce high volumes of a part, swiftly and cost-effectively. We can offer our customers light, medium and heavy turning facilities of 6 ft bed with up to 25 ft between centres, giving an excellent range. Taper turning and hydraulic copying are also available. We have invested in specialist-built heavy twin tool-post machines with c/w hydraulic copy to both tool-posts. D S & G. Herbert, Colchester, Ward, and Ajax are also available. Turning is used by many customers across many different industries such as aerospace and agriculture.

Super- Finishing

Super-finishing or super-polishing is used after a machining process, to improve the functionality of a component. This could be to reduce friction and prevent wear and tear, which could increase operational life span. Super-finishing is a precision finishing process and is vital for certain component parts. We can offer super-finishing by GEM. All grades of diamond-impregnated continuous belts are available as well as more standard systems, depending on your needs. Super-finishing is used by industries such as medical and automotive.

Drilling and Milling

Drilling and milling are a commonly used mechanical service. Our milling and drilling service gives an affordable, efficient and precise service that can be used to produce high-quality, consistent parts for your operations. We can offer light, medium and heavy drilling and milling, as well as universal milling and vertical c/w DRO. Drilling and milling are used throughout engineering and in industries such as aeroscape where precision is crucial.

N.D.T Testing

NDT, or non-destructive testing, is crucial for all manner of industries and projects. We can test for weld strength and flaws in metal, which may be used to build a dam, so strength is essential. We can spot-check on batches of components to ensure continuity of quality. NDT Testing reduces risk, by assessing material strength and resilience. Here at IRS, we offer a range of different NDT tests, including Magna-Flux electronic N.D.T crack detection.

Grinding

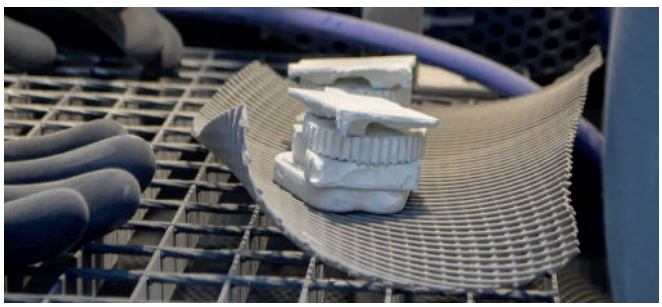
Grinding is often used as the final finishing stage of the engineering process. It is frequently used after turn-milling to provide a smooth and precise finished surface. Turn-milling can leave behind marks or grooves, which the grinding process can eradicate. This can be essential in precision engineering. We offer a range of different types of grinding from standard to specialist, including heavy and light cylindrical grinding, universal grinding, bore grinding, crankshaft grinding and surface grinding. We also offer both reciprocating and heavy Lumsden grinding. They are all fully diamond and specialist tools. Grinding is used throughout different industries, wherever precision engineering is essential, such as in aerospace and industrial sectors.

Boring

Boring is used to increase the size of an existing hole. As with many engineering techniques, it does not sit in isolation and works best when combined with other mechanical services and processes to produce the desired finished product. Boring can be used for water turbine runners, ring gear blanks, and flanges for large pipes, to name a few. Here at IRS, we offer different types of boring such as horizontal and vertical boring, as well as 5 ft diameter twin ram vertical boring. We can also offer Kearns Richards 4ft table horizontal boring and Kearns and Richards toolroom horizontal boring. We have invested in our machines and equipment so that we can offer our customers an excellent range of boring services. Boring is used throughout engineering and across a range of sectors such as the chemical and off-shore sectors.

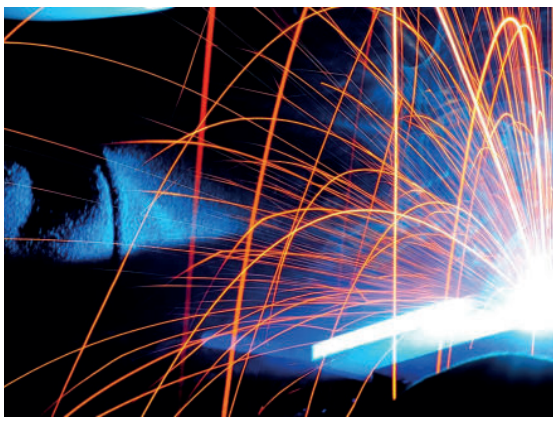
Slotting

Slotting is used for operations that are not easily machined, such as cutting internal or external gears. It can be used to cut grooves, keyways and slots, in both internal and external positions. We can offer 14” and 10” vertical slotting plus power broaching. Slotting is used in a range of applications and is an essential part of the overall engineering process.



Welding and Overlaying Processes

Welding is the process of joining two pieces of metal together by heating them to melting point. Different techniques and welds are suited to different scenarios and applications, and we will work with you to choose the very best solution for your needs. Our depth of knowledge and experience will ensure that you get the very best result every time.



PTA (Plasma Transferred Arc)

One of the main benefits of plasma transferred arc is that it can be automated, which allows for a high degree of consistency as well as making it a cost-effective solution. Both the amount of metal powder and the parameters of the weld can be carefully controlled, making it a very efficient system that reduces the quantity of waste. The finish from a plasma PTA weld is very smooth, ensuring minimal post-weld machining. This both reduces the cost, as well as the downtime of the item. Our PTA process can be used in a variety of ways, such as automatic or manual application, using light or heavy guns. We also offer plasma transferred arc c/w bore-spray. Plasma PTA is commonly used on valves for a range of industries, such as the petrochemical and marine industries.

Synergic Mig

Synergic MIG welding is a specific type of MIG welding. This is a simple, yet highly effective method, giving a consistently high-quality weld. It is very versatile and cost-effective. Here at IRS, we can offer synergetic Mig as well as standard heavy-cored Mig. MIG welding is used across a wide range of industries, it is often used for pipelines and ship constructions, as well as being a common solution for repair and maintenance. It is generally a better choice for thinner metals, which can be welded in our workshops.

Sub arc Welding

Submerged arc welding is the best choice for welding thick sections of steel, and can be used underwater, making it crucial for carrying out maintenance and repair in situ. Submerged arc welding gives high deposition rates, deep penetration capabilities, excellent weld quality, and the potential for simple automation. We can offer heavy submerged arc deposition. Submerged arc welding is used to weld thick sections of steel quickly and repeatedly, and is commonly used in industries such as shipbuilding, structural steel fabrication, pressure vessel manufacturing, and pipeline construction.

Spiro-Welding

Spiro welding is designed for welding workpieces together that are overlapped. This method gives a completed seam that requires no additional sealing, cleaning or painting, with channels that are perfectly tight along the entire length of the section. We utilise PTA, Auto-Synergic Tig and Auto-Synergic Mig. Spiro welding is used across a wide range of industries and applications.

Synergic Tig

Synergic Tig is a type of TIG welding. TIG welding is renowned for its versatility, specifically, in that it can join different metals together. TIG welding allows the welding of complex shapes, such as “S” bends or curves, which can be impossible to weld using other forms of welding. It is an attractive solution for onsite welding in hard-to-reach places, as the welding can be done in any position. We use a synergic TIG and a standard heavy Tig. It is often used for pipelines, where the weld needs to be clean and strong. It is a good choice where the weld will be visible.

MMA

MMA welding is a versatile welding technique that can be used in all manner of applications. It is still a popular welding option, even given the rise in more modern welding techniques such as MIG or TIG welding. MMA welding is cost-effective, portable and simple, giving a high-quality, strong weld. We offer manual metal arc welding and manual metal arc gouging. MMA welding can be used in diverse applications from welding metal furniture to welding steel for ships.

Powered Manipulation

Our powered manipulation gives increased control over the welding process. Welding manipulators allow the weld head to move over the workpiece, to provide safe and efficient welding. Here at IRS, we have invested in a 3-tonne fully powered manipulation tool, which can give an ultra-precise digitally controlled weld. This process gives an exceptional finish.

Micro Processor Control

Microprocessor welding controls give an enhanced level of precision for a resistance welding machine, in particular the adjustment of the welding current. One of the exceptional features of this is that it is possible to memorise different welding programs, saving time and allowing economic repeat jobs. We offer digital micro-controlled step-over, with the ability to program oscillation, dwell and linear speed. Automation helps to increase the efficiencies of repeated projects, reducing cost, and improving turnaround times.

Magna Flux NDT

NDT, or non-destructive testing, is crucial for all manner of industries and projects. We can test for weld strength and flaws in metal, which may be used to build a dam, so strength is essential. We can spot-check on batches of components to ensure continuity of quality. NDT Testing reduces risk, by assessing material strength and resilience. Here at IRS, we offer a range of different NDT tests, including Magna-Flux electronic N.D.T.

Materials Deposited

We work with a range of different material deposits, and will always advise on the best solution for your project. Materials deposited include pure Titanium, Technodur, Ultimet, Super Alloys, and Duplex Alloys. We offer the Full Stellite Ranges including F12, as well as Hastelloy C276, C22, and G30. We can also use Bronzes, Aluminium, Tool-steels, S.G Iron, Grey Cast Iron, and High Tensile steel, as well as the complete Hastelloy range including B2 and 625.

Industries and Sectors

Here at IRS, we work with customers across a wide range of diverse sectors. Our engineering knowledge and experience, helps us to work with our customers to find a solution, no matter the nature or complexity of your problem. We are renowned for our positive can-do attitude and will bring the same high level of attention to detail, and premium quality to every job that we undertake no matter the size, scale or industry.

Pump Components

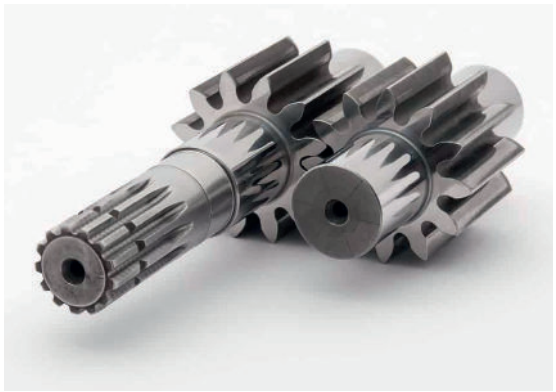
Pumps are essential to so many sectors and operations. Pumps usually fail due to fatigue failure. We offer reverse engineering for pumps and their component parts. Furthermore, IRS have, after extensive research and trials, built up a range of technological coatings with the main aim being to provide enhanced wear life, suitability for their environment and cost efficiency. This will help to improve the lifetime of the pump, which ultimately saves money and reduces downtime. Here at IRS we understand the pressures and resistance placed on pumps and can work with you to choose the best surface coating technology for your pump, given its operating environment and usage. Here at IRS, we work on impellers, seal glands, balance pistons, housings and volutes, neck rings, shafts and associated components and equipment.

Compressor Part Repairs

Compressors are made up of various moving parts, all of which are subjected to repeated high pressures. We have built up a reputation for providing exceptional service and quality repairs in the compressor industry. With our engineering knowledge and skill, we can refurbish key components from the compressor, whether they need reverse engineering to restore them to their previous functionality, or surface coating technology to extend their lifetime. As markets become more competitive and more pressured financially, IRS are here to support your business, with an efficient, reliable and cost-efficient service. We can refurbish screws, screw tips, end frames, housings, crankshafts, con-rods, vac pump rotors and tips to name a few.

Plant and Machinery

Whilst new parts may be available for your plant and machinery, they are often subject to long waiting times. Glocal pressures have caused shortages, frequently resulting in delays. Here at IRS, we can often reverse engineer existing parts in less time than it would take to obtain the new parts. This service has proven to be invaluable to our customers reducing downtime of machines, and preventing associated risks with workflow interruptions. This has proven to be extremely cost-effective for our customers. In many instances, components are also upgraded with more advanced coatings and overlays to withstand their aggressive environment thereby giving them a significant improvement to their working life, reducing future costs. We work with companies across a range of sectors to repair, reverse engineer, and improve the components of their plant and machinery and are renowned for our speed and quality. We work on components such as wheel hubs, axles and stub axles, winch drums, housings, rope sheaves, drive shafts and many more.



Automotive

Many businesses rely on their fleet to keep them moving, both for road transport and on-site vehicles. We can work with all manner of automotive part repairs from small shafts on motorcycles to axle bearing repairs on container forklifts. Whether you need a crucial part reengineering or are looking at surface coating technologies to help increase the lifespan of key parts, we can help. We offer a range of services to get you moving, axle repairs, wheel hubs, brake drums, bearing shafts, bearing housings, seal diameters, brake discs and clutch grinding as well as crankshaft repairs. IRS can provide anti-corrosive coatings on exhaust manifolds and related components on all forms of vehicles including military. IRS are renowned within the classic car industry, for their ability to be able to repair and reverse engineer obsolete components back to their original condition, enabling enthusiasts to get their pride and joy back on the road.

Wire Drawing

Throughout the history of IRS, we have provided a second-to-none service to the Wire drawing industry across the UK. We have developed our skills and knowledge to be able to provide an exceptional refurbishment service to our customers. We understand the importance of reducing downtime

and providing cost-efficient solutions for our customers' problems. With the advancement of technological coatings over the years we have been able to develop our coatings to suit our customers' needs, which has enhanced their product quality and production hours. The use of Ceramics, Chrome Oxides and Tungsten Carbides have now moved into wire drawing and with the knowledge gained we have been able to tailor their uses to the specific requirements of our customers. Improvements to drawing block coatings have greatly reduced common problems such as slip and anti-galling properties. We can refurbish an impressive range of components such as MRB, Eurodraw, Stripper and hi-draw blocks, as well as pulleys, cones and seal sleeves.

Rolling Stock

Not only have IRS been involved with keeping our railway network up and running, which provides vital freight services across the country, but we are also delighted to provide our services to various railway museums, the latest being Preston Steam Railway which keeps our heritage alive. We are seen as an invaluable partner in the reverse engineering of parts for this industry and with our Safety Critical Status in place we provide an excellent support service to major companies in this field. We can provide time-sensitive and cost-efficient repairs to a wide range of rotors and armature seals, bearings, deflector diameters, end shields and various other rolling stock components. The railway network provides an important alternative to the road network, and we understand the industry and bring our knowledge and dedication to every project that we undertake.

Electrical Motor Part Refurbishment

IRS has worked hand in hand with electrical motor repair centres across the UK providing a fast and reliable response to this industry. Electric motor refurbishment is essential when your AC or DC motor is damaged or underperforming. We can repair crucial parts, as well as offer reverse engineering for costly or obsolete parts, furthermore, our surface coating technologies work to improve the longevity and performance of the components. We understand that poor electrical motor function will cost your business money and impact the efficiency of your operation.
The team at IRS are experienced and knowledgeable in dealing with all types of repairs and refurbishments to a range of different components such as seals, bearings, drive journals, end casings and weld repairs.

Petro and Agri Chemical Industry

These vital industries rely on bespoke and often complex machines to work effectively and optimally. We work with these companies and offer our complete range of IRS services to support these industries including, repair, refurbishment and reverse engineering, as well as coatings, materials, welding applications, technical advice and ongoing research and development. Bespoke machines are often many years old, and the ability to be able to reverse engineer parts for these is crucial to keeping these machines operational. Rapid technological advances are being made in surface technologies and IRS are at the forefront of providing these advancements to these industries with coatings and overlays to seals, shafts and major parts to increase the efficiency and life of critical components.

Industrial Hard Facing

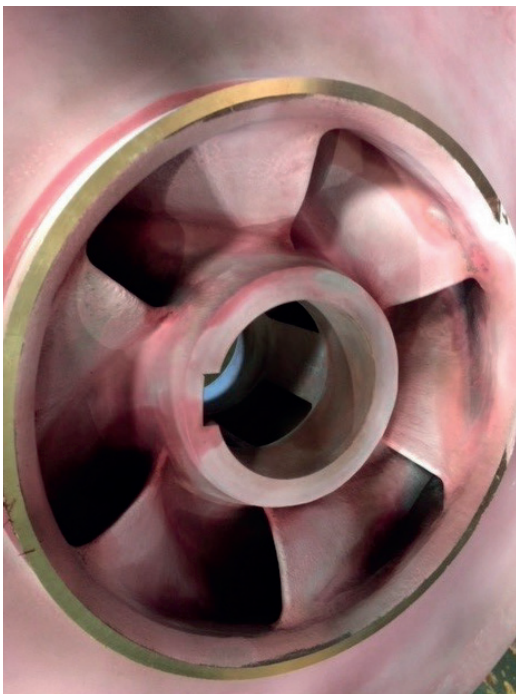
Industrial hardfacing is a crucial service that is used across many industries and sectors. In general, it is more cost-effective to repair parts than replace them, and hardfacing is an ideal solution to this. It increases the service life, making parts stronger, and more resistant to wear and corrosion, sometimes it makes parts stronger than their original status, so actually improves the part. It is a quick, simple procedure, which helps reduce costs, both through the price of the work, and the downtime of the equipment. IRS has developed, with the help of suppliers, customers and our internal research and development team, various coatings and overlays to suit our customers' requirements. These are designed to withstand difficult, abrasive and corrosive conditions, whether they are environmental or chemical. Our impressive R&D team has been instrumental in developing one of our proprietary overlays IRS SUPERHARD. This has been put to extensive use in the UK and internationally providing excellent results. Hardfacing is suitable for a vast range of components, including but not limited to mixing impellers, shredders, impeller castings, blades, screw and ribbon conveyors, plastic moulding components, industrial and commercial plant and machinery.

Gallery

Sometimes the best way to explain what we do is to show what we do. Take a look through our gallery, to see some of the projects that we have worked on with our customers. These will give you a glimpse of just some of the projects that we have undertaken. Remember that if you have a problem, we have a solution.

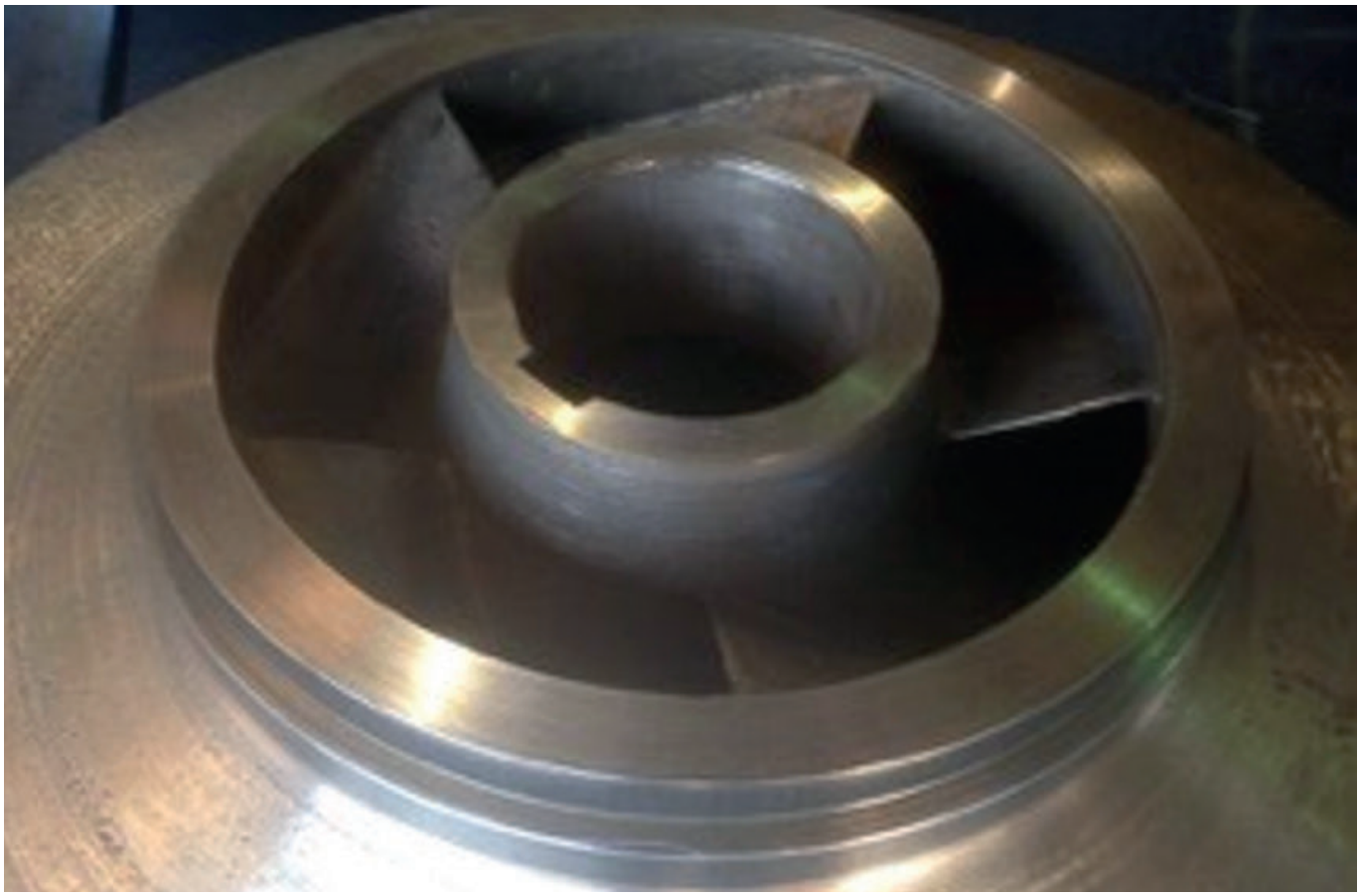
Impeller Refurbishment

IRS has always had the philosophy with customers “Never say never.” As you can see from some of the photos of these impellers, they were seriously damaged. Some people would have given up on them, and written them off as unrepairable, but the team at IRS were happy to accept the challenge. After an initial consultation and a material analysis, a repair procedure was put in place and presented to our customer who gave us the go-ahead for the project. After further non-destructive testing and prep work were undertaken, to understand the exact parameters of the repair, IRS continued with welding dressing and machining of the components.



Impeller Refurbishment Continued

Once the welding procedures were finished, the impellers were proof machined and subjected to N.D.T. After all these stages the final coating was applied. These impellers were subjected to a particular working environment and as per the customer’s requirements, these impellers were coated with chrome oxide and aluminium bronze using IRS surfacing technologies. The finished result is certainly impressive, you would not believe these were the same impellers!



Plant Part Refurbishment

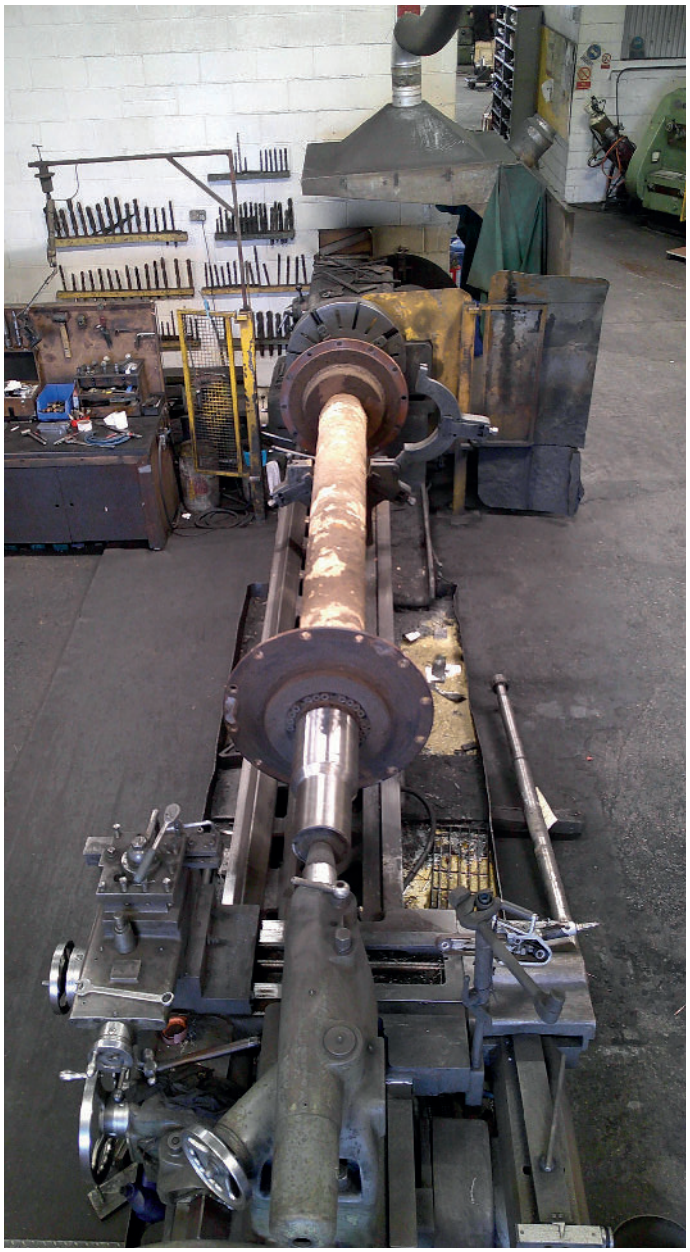
A major refurbishment was required here on a Fantuzzi FDC 500 axle assembly. A crucial part that was much needed, so time was of the essence with this project. The customer G. Stewart (NW) Ltd trusted IRS to understand the importance of a quick turnaround for this part, and once again IRS did not disappoint.

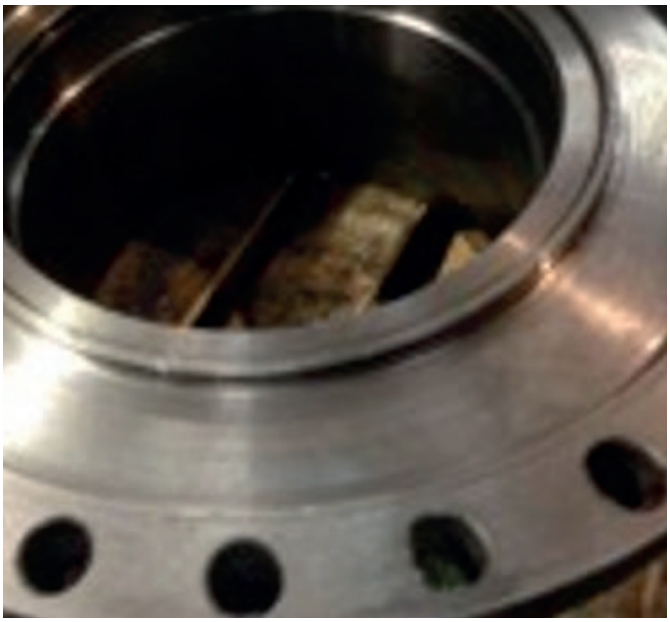
The main bearing diameter and seals on the axle stubs were badly damaged due to the breakdown of the bearings and consequent impregnation into diameter. All dias were reclaimed and returned to the recommended dimensions on both ends.

Job done, quickly, efficiently and professionally.

The hub bores, bearing, seal ring areas and damage to faces on this component are severe. The work that we have carried out re-welding and Arc spraying of relative areas has saved thousands of pounds, as well as the associated savings by reducing the downtime for the machine operation. This was part of the same project and the same trust from the customer in our ability to perform a quick turnaround.

The brake drive housing was also badly damaged as you can imagine due to the collapse of the bearings. This was also prepped and Arc-sprayed and returned to its original dimensions. The customer retrieved the refurbished part so quickly, we didn't even have time to take a photo!



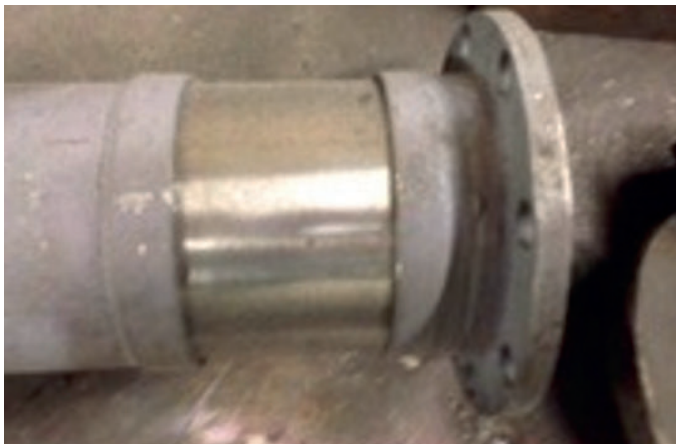
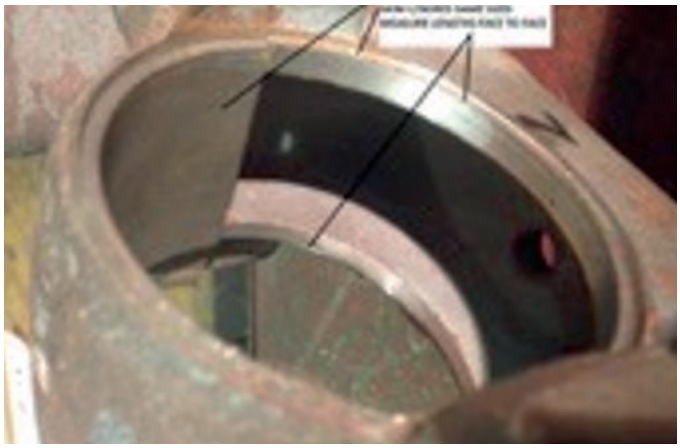


Automotive Part Refurbishment

Many classic car parts are now obsolete, and enthusiasts rely on refurbishment and reverse engineering to keep their old motors turning. We didn't disappoint with either of these projects, helping both customers to drive away happy.

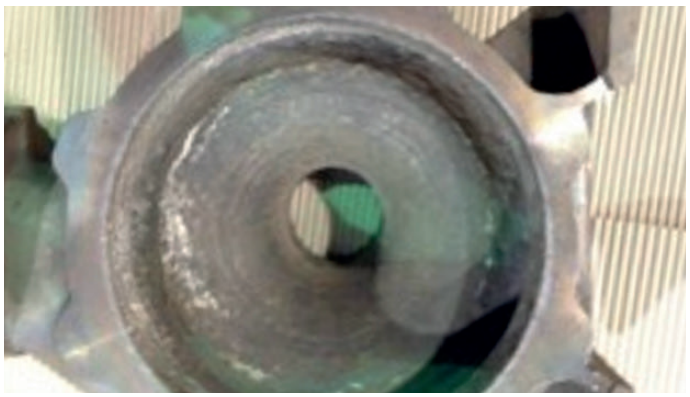
The clamping area for the split housings was damaged on the rear axle banjo of a Riley Mentone 1933. After assessing the damage and evaluating the part, we carried out the work. We skimmed the bushes, built up the location area and set the distance from the flange face, resulting in one refurbished and operational rear axle banjo, and one happy customer.

A proud owner of a 1935 MG roadster, similar to this, asked if we could repair the bearing and seal diameters on his drive axle. We said we could, and we did, and he drove away happy!

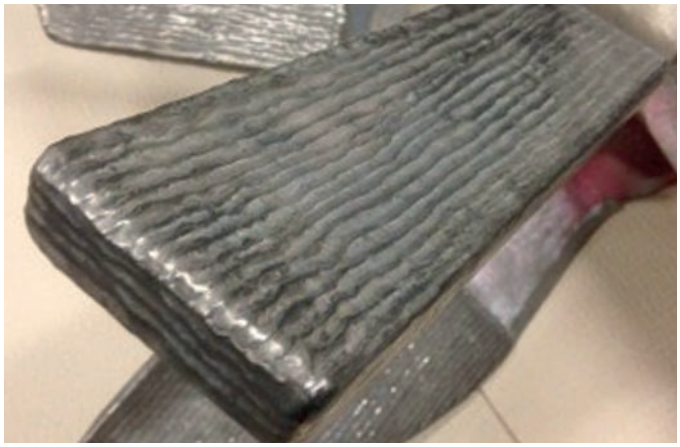
Hard Facing

Alan, the manager of a local company, required a hard coating on the internal surface of this pump casing. The internal surface was being subjected to a hostile environment due to the aggressive nature of the product being used by his customer. The IRS research and development team has carried out testing on similar abrasives, so we chose a hard-facing that had been developed at IRS. This was applied and tested, with impressive long-lasting results. Hardfacing is an excellent choice for a variety of scenarios, it can be applied by different processes, and to varying degrees of hardness. Our team are always available to offer advice about your next project.




Hard Facing

Hardfacing can be an excellent way to help improve the strength and lifetime of key components. A brake lining manufacturer approached us, with the need to improve performance and reduce replacement costs. After carefully understanding the scope of the project and the required aims, we made a significant improvement to their mixing blade impeller by hardfacing. We trialled this upgrade on a selected number of impellers, and after successful results, this hardfacing has been applied to all impellers, and we have forged a long-lasting relationship with another happy customer.



Step by Step Air End Rotor Repair

An emergency repair was needed on a compressor air end rotor for a ship in port. The damage was severe, with critical wear to the main bearing diameters due to bearing collapse. The rotor tip contact damage was increasing the working tolerances, which was in turn reducing power and creating underperformance.

Prior to beginning work, we protected the adjacent areas to the bearings. All good work begins with preparation, so we pre-machined the damaged areas to clean and prep them before the work began. We used shot blasting on the area to clean the damage away, this was then followed by the application of a bond coat, then a top coat to plus 1mm above size min. After these steps had taken place, we then removed the protection of the surrounding areas.

We made sure that the machine reclaimed diameters were set to leave .5mm for the grinding process and seal.

The rotor tips were welded up and were ready for the first stage of cylindrical grinding.

The diameter of the rotor is ground to plus .30mm above the finished size and the final dressing of the tips and screw are carried out.

The final cylindrical grinding is carried out on all reclaimed areas to recommended tolerances, and the project is successfully finished.

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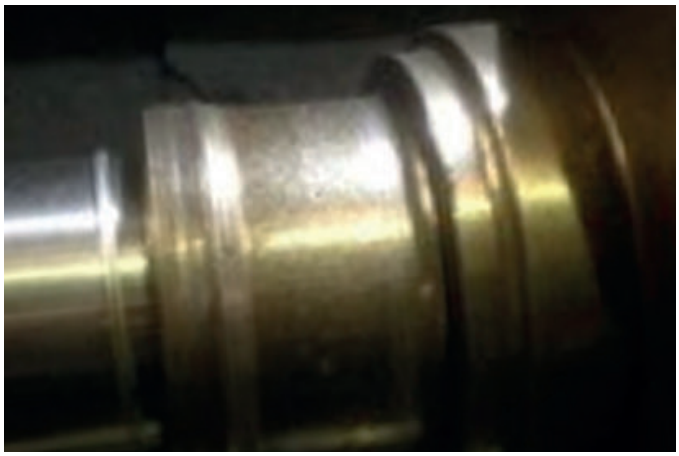

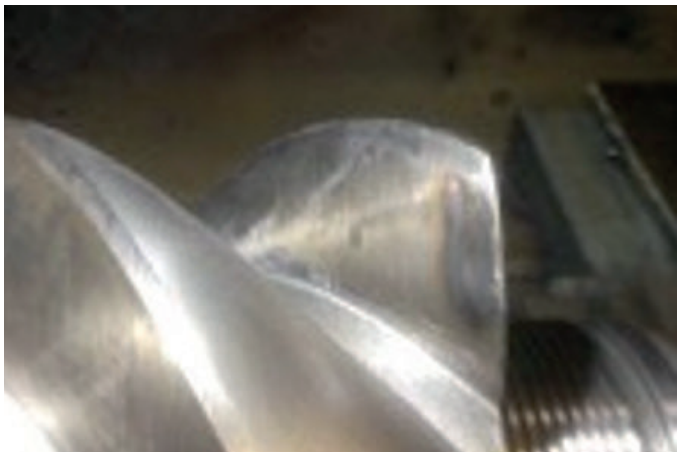

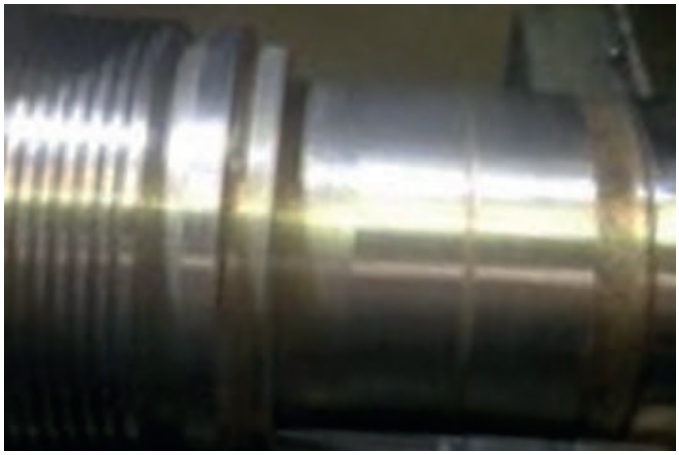

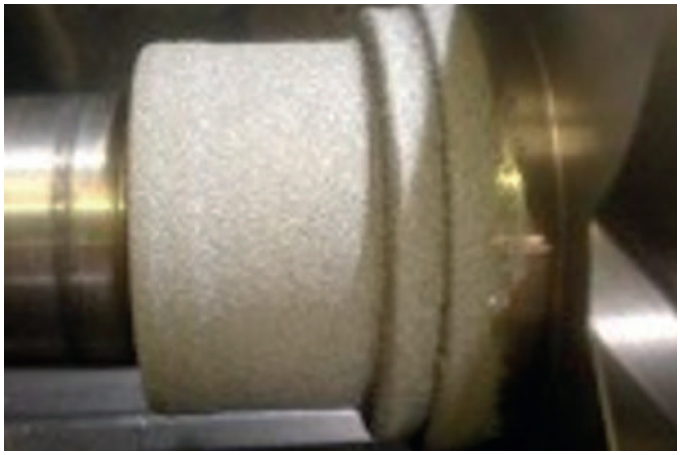

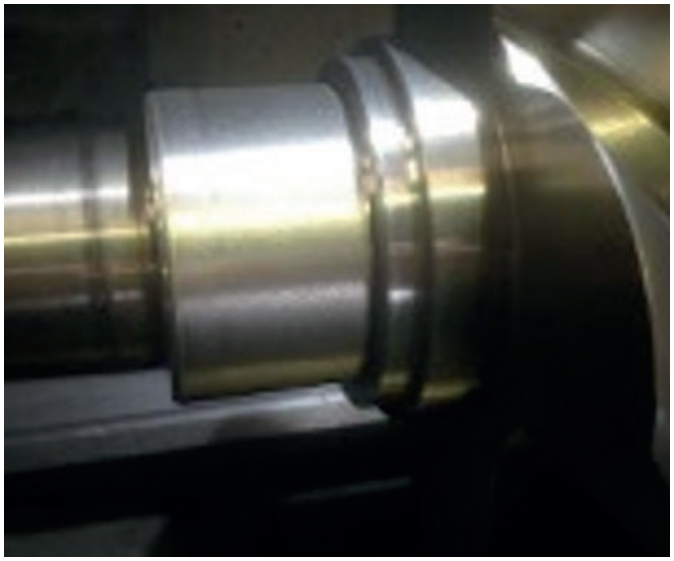

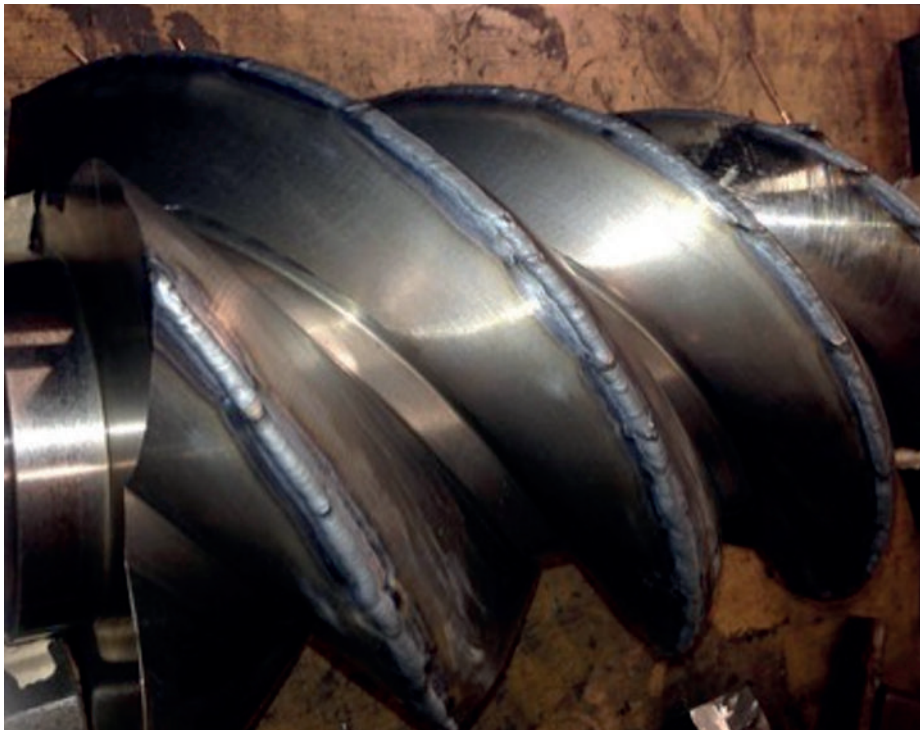

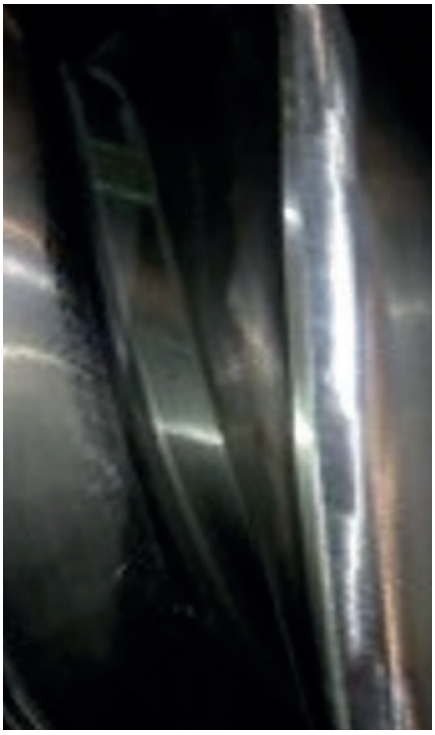

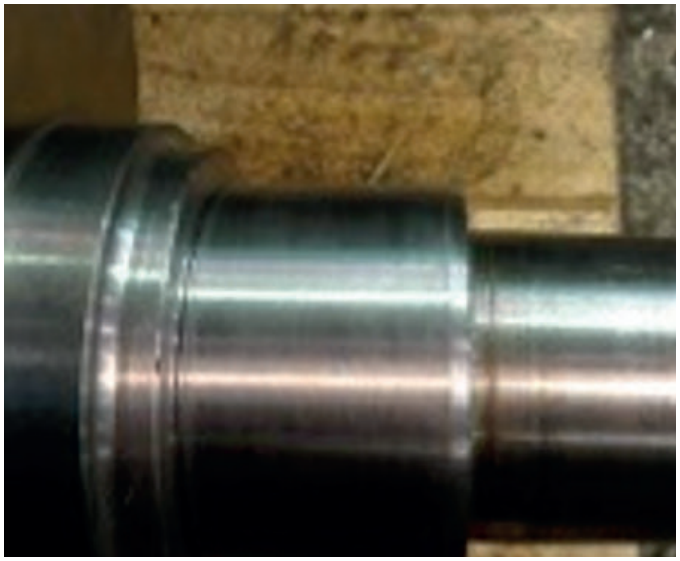

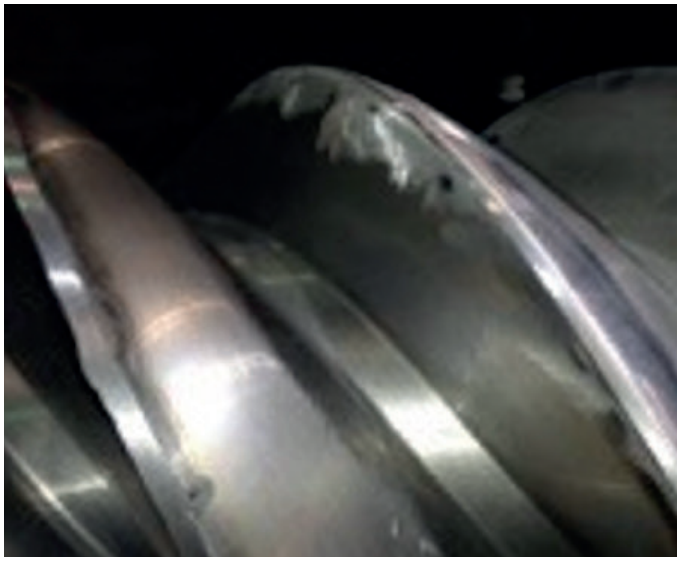

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